Fall 2008

DroughtScape- Fall 2008

Kelly Smith

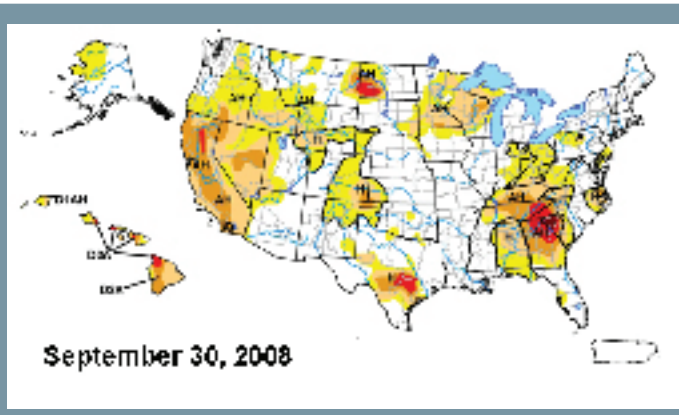
National Drought Mitigation Center

DroughtScape

The Newsletter of the National Drought Mitigation Center

Fall 2008

Look for Warm West, Rainy Gulf, Easing Drought



For coming months, forecasters anticipate above-normal temperatures over much of the west, possible above-normal rainfall over the Gulf Coast, and possible improving drought over the Plains and Southeast.

read more on page 2

Drought Impact Awareness Growing: Weather Forecast Offices, Geographers Highlight Issue

The 122 Weather Forecast Offices of the National Weather Service in June began producing Drought Information Statements, including impacts, any time part of their forecast areas were in severe drought or worse, as determined by the U.S. Drought Monitor.

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The American Association of Geographers is calling for papers for a drought impacts session at its March meeting. The deadline is October 15.

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Hundreds+ See NDMC at Ag Trade Show

From left, Denise Gutzmer, Eric Hunt and Jeff Nothwehr enjoyed a lull when it rained at the end of Husker Harvest Days. The NDMC booth was part of the University of Nebraska-Lincoln's water-themed presence at the event.

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Washington Workshops Scheduled for November

The NDMC is heading to the Spokane, Washington, area the week of November 10, with a VegDRI listening session, an RMA tools workshop, and a presentation to the Washington Association of Wheat Growers.

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New Drought Monitor Authors Profiled

NDMC Takes on New Projects

The NDMC has recently finalized contracts and grants with federal partners on a variety of projects.

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NDMC Welcomes New Employees

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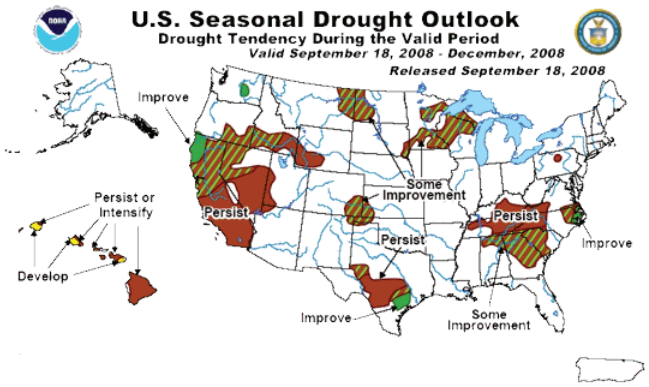
Fall 2008 U.S. Drought Outlook and July to September Summary

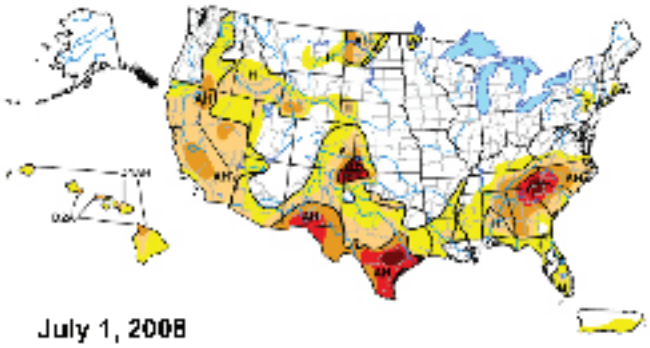
By Brian Fuchs, Climatologist, National Drought Mitigation Center

Drought classifications are based on the U.S. Drought Monitor. For a detailed explanation, please visit http://drought.unl.edu/dm/classify.htm. *The outlook integrates existing conditions with forecasts from the National Oceanic and Atmospheric Administration's Climate Prediction Center:* http://www.cpc.ncep.noaa.gov/

Outlook: Over the next several months, temperatures are anticipated to be above normal over much of the Rocky Mountains and western United States. Precipitation could be above normal over the Gulf Coast region, but should be seasonal over much of the country. Drought conditions may improve over much of the Plains and portions of the Southeast, while the snow season will dictate the extent of any improvements in the west.



July: July started out with 40 percent of the United States abnormally dry or in drought according to the U.S. Drought Monitor. Several core areas of drought existed, with Texas, the Oklahoma Panhandle and the Carolinas being the center of these extreme to exceptional droughts. Several areas of severe drought developed in July, with North Dakota, California, Colorado, Hawaii and the Southeast having the most serious concerns. Agricultural losses were being reported in several locations, including complete failure of the winter wheat crop in parts of the Texas and Oklahoma panhandles.

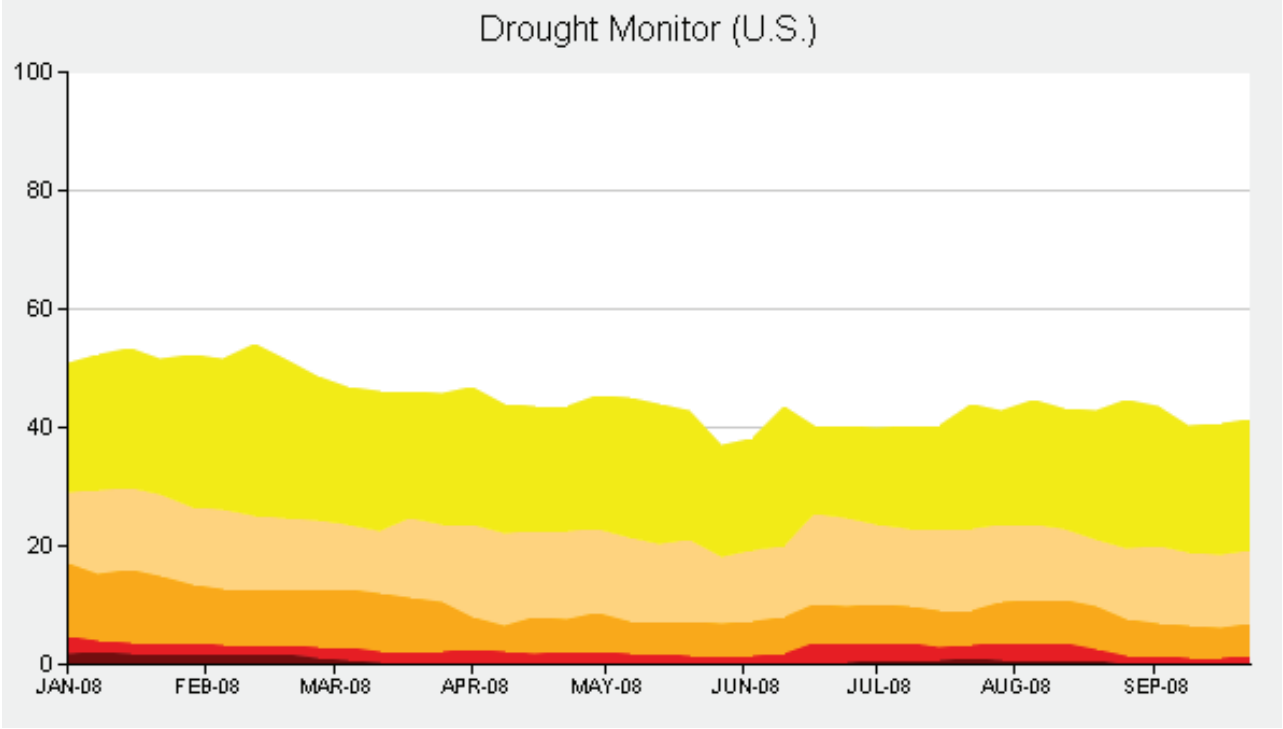


August: Improvements to drought regions during August were due to widespread and above normal precipitation over much of the southern Plains, High Plains, Gulf Coast, and Mid-Atlantic regions. Drought intensity across the United States improved overall, with only 7.7 percent of the country having severe to exceptional drought at the end of August, compared with 10.6 percent at the beginning of the month. However, the spatial extent of drought expanded in August, with 45 percent of the United States abnormally dry or in drought, compared to 43 percent at the end of July.

September: Drought continued to improve during September, with 41 percent of the country observing abnormally dry or drought conditions at the end of the month. Drought intensity improved as well, with just 6.8 percent of the United States in severe to exceptional drought at month's end. Conditions worsened over the west, with California having an expansion of

July to September Summary, continued

severe drought and intensification to extreme drought. Natural landscapes and rangelands that are not associated with managed or irrigated land have suffered a great deal this year in California, with many counties having losses of more than 50 percent of total forage production.



This time series chart shows the proportion of the United States shown in drought on the U.S. Drought Monitor from January 1, 2008, through the end of September. Yellow represents abnormally dry, with successively darker colors representing moderate, severe, extreme and exceptional drought.

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http://drought.unl.edu/droughtscape/droughtscapecurrent.htm
What's New
http://drought.unl.edu/new.htm

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Three New U.S. Drought Monitor Authors Include Westerner

Laura Edwards, Western Regional Climate Center

Laura Edwards

Laura Edwards, from the Western Regional Climate Center (WRCC), took her first turn as lead Drought Monitor author for the map that came out Thursday, September 18. She joins a team of 10 climatologists from federal agencies and universities who take turns assimilating and reconciling a variety of data on drought and water supply to produce weekly updates of the Drought Monitor map, released every Thursday at http://drought.unl.edu/dm/monitor.html.

Edwards expands the authors' diversity on at least two fronts: She'll contribute a valuable western perspective to the group, and will be the first female Drought Monitor author in two years. "The authors bring a mix of expertise and people," said NDMC climatologist Brian Fuchs. "That helps our credibility."

"I think it's valuable for the DM to have an author who can 'ground truth' conditions in the West – like having an artist in residence," Edwards said. "There are always the local and regional connections that we have at the WRCC." On what she may bring as a female author, Edwards said, "Overall, I think women are good communicators and good historians. But in the end, we're all trying to be objective."

Edwards has been an Assistant Research Scientist at the WRCC, part of the Desert Research Institute in Reno, NV, for almost five years. She holds an M.S. in Meteorology from the University of Maryland, where she was the Assistant State Climatologist, and a B.S. in Physics and French from the University of Minnesota.

Edwards first came to the WRCC to work on climate monitoring under a grant from the California Energy Commission. Working with Kelly Redmond, WRCC's Regional Climatologist, piqued her interest in drought. She also began a variety of outreach and education projects on weather and climate, and is one of the volunteer coordinators of CoCoRaHS in Nevada. A West-Wide Drought Tracker is another recently funded project she'll be working on, using gridded climate data products and PRISM data to create a website that lets users drill down to get regional and local climate data. During a recent visit to the NDMC, Edwards discussed ways to tie the Drought Tracker into the Drought Decision Support System that the NDMC is developing.

Edwards will also be working on a National Science Foundation project to support women early in their careers in atmospheric science. She is working to recruit recent graduates and to organize workshops that will help provide "tools to work through life and career, and to tie it together in a more manageable way." The project will match young scientists with mentors and provide networking "reunions" within larger conferences.

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Three New U.S. Drought Monitor Author Profiles, continued

Eric Luebehusen, Joint Agricultural Weather Facility/World Agricultural Outlook Board, U.S. Department of Agriculture

Eric Luebehusen

Eric Luebehusen, one of three new Drought Monitor authors to start this year, is a Baltimore native who knew from an early age that he wanted to be a meteorologist.

Among his earliest memories are listening with his father to reports of ice depth on Chesapeake Bay during the winter of 1977-78, and wanting to be able to tell other kids whether it would snow. It was during a weather-watching interlude in sixth grade that his teacher suggested that he'd be a good meteorologist. Another sign came a year later in a seventh- grade earth science class, when Luebehusen scored 100 percent on the weather chapter – significantly better than his classmates, who were scolded by the teacher for not doing better.

Luebehusen found the closest meteorology program he could, at Penn State, and completed a B.S. in 1992. After that he became the Chief Meteorologist for the Maryland Department of the Environment, and helped launch Maryland's Air Quality Forecasting Program in the mid-90s. In 1999, he got the chance to join the National Oceanic and Atmospheric Administration (NOAA) at the National Environmental Satellite, Data, and Information Service (NESDIS). As interesting as the work was, his fiancé – now his wife – soon convinced him to find a position with an organization that did not require 24/7 staffing.

He joined the Joint Agriculture Weather Facility (JAWF), with the Climate Prediction Center (CPC) of the National Weather Service (NWS), and stayed with the same group but transferred to the U.S. Department of Agriculture (USDA) side of it in 2005. With the switch to JAWF, Luebehusen began looking meteorologically at the entire United States, rather than just the Maryland area. He is also responsible for international areas, including Europe, the Middle East, Northwest Africa, and India.

Luebehusen works with Brad Rippey and Dave Miskus, both Drought Monitor authors. Given his GIS skills, it was only a matter of time before he joined their ranks. Although Luebehusen had a good idea what he was getting into before his first two-week rotation as an author in August, he gained a full appreciation for the amount of interaction that goes into each map. Advice from his more experienced coworkers helped: "Ultimately, it is your authorship. You need to be respectful to the field, but if you're seeing a strong signal one way or the other, go with your gut."

Luebehusen has stayed connected to his roots. Although he works at the USDA building in downtown Washington, D.C., he lives north of Baltimore, and commutes an hour and a half each day. Practicing and teaching karate over the lunch hour in the gym where he works helps break up the day and relieve stress. Home life is very busy right now, as Luebehusen and his wife, Chi, welcomed a second son in June. Their first is nearly two years old.

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Three New U.S. Drought Monitor Author Profiles, continued

Michael Brewer, National Climatic Data Center

Dr. Michael Brewer, a climatologist and physical scientist with NOAA's National Climatic Data Center (NCDC), had been paying attention to drought for many years, before becoming one of this year's cohort of three new Drought Monitor authors.


Mike Brewer

Brewer's first stint as author was on the map dated June 24. His impression of the process? "It's always tough to work with a lot of people to get a consensus product, especially in areas of the west, addressing places where water is so managed, and since I come from the east, where it actually rains occasionally." He relocated from Maryland to North Carolina in April when he made a transition from the National Weather Service to NCDC.

Brewer has been involved with federal efforts to address drought for many years, including:

- Overseeing a federal grant to the Western Governors Association to come up with recommendations for the National Integrated Drought Information System (NIDIS), which was established by law in late 2006 after years of work.
- Co-leading the NIDIS portal (drought.gov) development team with Mark Svoboda, a climatologist from the National Drought Mitigation Center, and running the portal's day-to-day operations.
- Participating in the Interim National Drought Council, between the conclusion of the National Drought Policy Commission's work in 2000 and establishment of NIDIS.
- Serving on the team that developed the President's National Science and Technology Council's Committee on Environmental and Natural Resources Grand Challenges for Disaster Reduction (including drought).

Despite the intensity of the U.S. Drought Monitor process, Brewer enjoys the tangible outcome. "I'm an applied climatologist," he said. "I'm used to putting things together. It's nice to have an end product that's actually being used by so many people, helping them make decisions."

Brewer's three degrees are from the University of Delaware. He earned a B.A. in Geography in 1991, an M.S. in Geography in 1994, and a Ph.D. in Climatology in 1997. In addition to his work for NOAA, Brewer has been on faculty at The George Washington University and at the University of Rhode Island.

The complete list of current U.S. Drought Monitor authors is on-line at http://drought.unl.edu/dm/contacts.html.

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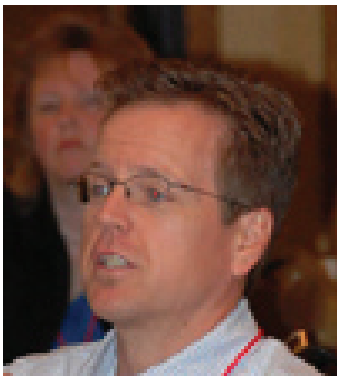
Weather Forecast Offices Now Producing Drought Statements

The National Weather Service began producing Drought Information Statements in June that assemble current drought conditions, impacts, and forecasts, for the benefit of media, policy makers, and the general public.

"Coming from an agency that traditionally focuses on severe weather, this will help heighten awareness of drought as a natural hazard," said Mark Svoboda, National Drought Mitigation Center climatologist. "We're reaching new users – clients, stakeholders, constituents, depending on who you are – and it'll help them all think about what they can do to reduce the impacts of drought. It can run the whole gamut, from the local level up to the White House."

Doug Kluck, Climate Services Program Manager at the National Weather Service Central Region headquarters in Kansas City, was instrumental in establishing the new policy. It will help bring a more systematic focus to drought, he said, as "122 National Weather Service Forecast Offices across the nation will issue these statements when conditions warrant." It requires Weather Forecast Offices (WFOs) to issue drought information statements at least once a month, as long as any portion of their coverage area is in severe drought, according to the U.S. Drought Monitor.



Doug Kluck

"It may take a while, but the more people that know it's out there, the more it gets used," Kluck said. "We don't know all the people using it." He added that one of the first groups known to benefit from the new information is local and regional media, who are interested in localized impacts, conditions and prospects. "For the media, it's a nice summation of what's going on in the local area."

Current statements are on-line at http://www.weather.gov/hic/current/drought/index.shtml. Plans are underway to incorporate them into the National Integrated Drought Information System (NIDIS) portal, drought.gov, and into the Drought Impact Reporter, http://droughtreporter.unl.edu

Drought Information Statements ideally include a summary of drought conditions, impacts, and forecasts, Kluck said. Among the impacts that WFOs are encouraged to survey are:

- State and local actions taken to mitigate impacts
- Soil moisture and / or groundwater impacts
- Agricultural impacts
- Fire impacts
- Current water restrictions
- Impacts on other sectors such as river navigation and the environment

"There is no single methodology for assessing drought's impacts, so it makes sense that WFO's use whatever resources are available," said Dr. Michael J. Hayes, director of the National Drought Mitigation Center. "We are hoping, in fact, that this process will help identify additional sources of drought information that might also already be available for these statements."

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NDMC Welcomes Public Participation Specialist Nicole Wall

The NDMC welcomed Nicole Wall in August 2008 as a public participation specialist who will focus on outreach to stakeholders.


Nicole Wall

She brings seven years' experience from the Heartland Center for Leadership Development in Lincoln, Nebraska, where she worked with a range of clients, from non-profit organizations to municipalities. The Heartland Center spearheaded public participation for some of the City of Lincoln's water-related projects. Wall also worked for the University of Nebraska Medical Center for two years, writing materials to foster a team-based approach to diagnostic skills in medical students. As adjunct faculty for the College of St. Mary, she taught physiology and forensic science.

Wall is a Ph.D. student in the School of Natural Resources. She earned a master's degree in forensic science in 2003 from Nebraska Wesleyan University, and a B.A. in anthropology in 1998 from the University of Nebraska-Lincoln. Wall is interested in exploring connections between climate and forensic science. In 2003, she was part of a forensics team that relied heavily on climate data to determine that a murder victim's body had been left in one place for several years. Dry conditions in southern Nebraska and other factors led to mummification rather than decomposition.

"One of the things that interests me about drought and climate is its effect on people and how it influences their health and overall well-being," Wall said.

Wall lives in Ashland with her husband and two children. She grew up in Laurel, Nebraska, and took full advantage of a high school that allowed her to focus on math and science. She began working in greenhouses for UNL's Horticulture Department while still in high school.

NDMC Welcomes Geospatial Analyst Chris Poulsen

Chris joined the National Drought Mitigation Center in September 2008 as a Geospatial Analyst. His primary area of focus will be the Vegetation Drought Response Index (VegDRI), which combines satellite data with many other variables to depict drought's effect on vegetation.


Chris Poulsen

"I like doing hands-on technical work," Chris said.

Chris previously worked for nine years with Applied Data Consultants, a GIS firm that started in Omaha and relocated its headquarters to Eau Claire, Wisconsin.

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Poulsen, continued

He brings a wealth of experience in developing GIS applications for various clients, including water-managing agencies such as the U.S. Army Corps of Engineers and Nebraska's Central Platte Natural Resource District.

Chris is looking forward to the new challenges that working at the NDMC will bring, including sharpening his programming skills, and combining physical and cultural aspects of geography. "I've always been interested in natural resources and the issues facing us with global warming and desertification," he said. "I like the thought of working with something that would help people make better decisions."

He earned a B.A. in Geography and History from the University of Nebraska-Omaha in 1994, and an M.A. in Geography from UNO in 2004.

Chris commutes from Omaha, and enjoys cycling and reading in his spare time.

NDMC Commits to New Projects

The NDMC and its partners have finalized several new grants and contracts recently:

Drought Ready Communities: The NDMC and partners — the Oklahoma Climatological Survey and the Illinois State Climatologist's Office — will develop a drought planning process for communities, piloting the process with municipalities in Nebraska, Oklahoma and Illinois. The two-year project is funded by the Sectoral Applications Research Program of the National Oceanic and Atmospheric Administration.

NIDIS Help Desk: The NDMC and federal partners are helping staff the "Help Desk" for drought.gov, the drought portal of the National Integrated Drought Information System, and providing other support functions for portal products and activities.

Low-flow studies: The NDMC has contracts with the National Weather Service and NIDIS to conduct low-flow studies for the Upper Colorado River in the West and in the Alabama, Coosa, and Tallapoosa (ACT) and Apalachicola-Chattahoochee-Flint (ACF) River Basins in the Southeast. The NDMC is identifying potential impacts of low river flows through surveys of relevant local, state, and federal water administrators. Providing river flow and potential impact information allows communities, states, and federal interests to better understand their vulnerabilities and make more informed decisions when preparing for and responding to potentially hazardous situations.

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Washington (State) Invited to Comment on Drought Tools

VegDRI Listening Session
Tuesday, November 11, 10 a.m.-2 p.m.
Walla Walla Regional Airport Conference Room
For the latest agenda, please visit
http://drought.unl.edu/registration/wa2008/waregistration2008.html
To register, please contact Nicole Wall (email nwall2@unl.edu or call 402-472-6776) or Meghan Sittler (email msittler2@unl.edu or call 402-472-2712).

On Tuesday, November 11, the NDMC will conduct an in-depth listening session on the Vegetation Drought Response Index (VegDRI), which incorporates data from remote sensing into a map that shows the effects of drought on vegetation. VegDRI has expanded to the western United States this year and will expand to cover the east in 2009. It is on-line at http://drought.unl.edu/vegdri/VegDRI_Main.htm

Drought Management Tools Workshop
Wednesday, November 12, 8:45 a.m.-4:30 p.m.
Eastern Washington University, Cheney, Washington
To register, beginning October 5, and for the latest agenda, please go to
http://drought.unl.edu/registration/wa2008/waregistration2008.html

The National Drought Mitigation Center and the National Weather Service are presenting a workshop to help Washington reduce vulnerability to drought. Presentations will focus on Washington's drought experiences and on the drought management tools that the NDMC is developing with sponsorship from the U.S. Department of Agriculture's Risk Management Agency.

Workshops will be of interest to farmers and ranchers, people whose livelihoods depend on tourism and recreation, water suppliers, environmental organizations, natural resources managers, graduate students and state and local officials with responsibility for building resilience to drought through monitoring and planning. All are welcome, but sign up soon because space is limited.

Please register on-line at the link above. There is no cost. If for some reason your on-line registration does not go through, please contact Nicole Wall, Public Participation Specialist for the NDMC (email nwall2@unl.edu or call 402-472-6776).

Washington Association of Wheat Growers Convention
Drought presentation Friday, November 14, 2-3 p.m.
Spokane, Washington

A representative of the National Drought Mitigation Center will provide an overview of our activities for the Wheat Growers.

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Geographers Call for Drought Impact Papers

Association of American Geographers
2009 Annual Meeting
Las Vegas, NV, March 22-27

Proposed Session: "Reducing the Threat of Drought:
Better Understanding Drought Impacts and Risk Management Options"

Sponsors:
Hazards Specialty Group
Water Resources Specialty Group
Climate Specialty Group

Drought is one of the most expensive hazards in the United States, with average annual losses roughly estimated at $6 billion a year. Yet, it is still one of the least understood and mitigated natural hazards. There are still many challenges to fully understanding and proactively reducing the effects of drought.

Therefore, this session invites researchers interested in elaborating on and refining our understanding of drought impacts and risk reduction strategies. Topics falling under that broad scope may include estimating economic, social, and environmental impacts; characterizing drought vulnerability; developing current and future drought impact scenarios; and investigating how drought management efforts increase or decrease the range, severity, and distribution of impacts.

If you are interested in presenting a paper in the session:

1. Register and submit your abstract online: http://www.aag.org/annualmeetings/

2. Email your presenter identification number (PIN), paper title, and abstract to the session organizers by October 15, 2008.

Organizers:

Kirstin Dow
Department of Geography, University of South Carolina
Email: DOWK@mailbox.sc.edu
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Cody Knutson
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Husker Harvest Days Showcases UNL Water Programs, Including NDMC

Meghan Sittler, NDMC Research and Outreach Specialist, is shown above being interviewed by Mike LaPorte of KRVN Radio at Husker Harvest Days 2008, September 9-11, an agricultural trade show. An estimated 100,000 visitors attended this year's show at its permanent home in Grand Island, Nebraska, and an estimated 3,500 stopped by the University of Nebraska-Lincoln's newly upgraded building, below. The NDMC was one of several water-related exhibits featured this year.

Visitors to the Drought Center's booth at Husker Harvest Days included "Santa Claus," above, with the monogrammed jacket to prove it, and Nebraska Governor Dave Heineman, below.